

Supplemental Material

Frequency and impact of serious infections in hospitalised patients with Sjogren's disease- a longitudinal cohort study

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Running title: Serious Infections in Sjogren's disease

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Supplementary Table 1- List of diagnostic codes used for identification of serious infections and other complications

	ICD-9-CM diagnosis	ICD-10-AM diagnosis
Sjogren's disease	710.2	M35.0
Serious Infection composite	Arthritis Care Res 2015;67:1078–85 Arthrs Rheumatol 2021 ;73(4):617-630)	
Pneumonia	003.2, , 480.x- 486.x, 513.0	J12-J18, J10, J11 ,A48.1 ,B01.2 ,B05.2 ,B25.0
Urogenital infection	590.x	A54-57, N10, N30.0, N39.x, N41x, N45.x, N70.0-76, N77.x
Skin /soft tissue infection	040-041, 569.61, 681.x, 682.x, 785.4, 728.86, 035.x	A36.x, A46, ,A60.x B00.x-B09, B35.x-B36.x, K11-12, L02, L03, ,L00,L01, L04, L05, L08, L30.3 , M72.6
Sepsis	038.x, 790.7	A40.x ,A41.x ,A32.7 ,R57.2 ,R65.0,R65.1
Opportunistic infections	010.x -018.x, 027.0, 031.x, 039.x, 053.x, 075.x, 078.5, 112.4, 112.5, 112.81, 112.83, 114.x, 115.x, 116.0, 117.3, 117.5, 130.x, 136.3	A15-19.9 , ,A31- A32, , A43.x, B02.x, B25.x, B27.0x B27.1x , B37.x, B38. x, B39.x ,B40. x , B44. x, B45.x, B58. x, B59,
Tuberculosis	010.x-018.x	A15–A19
Non-tuberculous mycobacteria	031.x	A30-A31
Cryptococcosis	117.5	B45
Aspergillosis	117.3	B44
Histoplasmosis	115	B39
Candidiasis	112	B37
Other mycoses (excluding above)	113-118	B38-B49
Pneumocystosis	136.3	B59
Cytomegaloviral disease	078.5	B25

Varicella Zoster virus	052.x, 053.x	B01, B02
Mucosal disease		
Conjunctivitis	372.x	H10.x
Keratitis	370.x	H16.x
Caries/periodontal disease	521.x	K02.x-K04.x
Sialoadenitis	527.x	K11.x
Other morbidity		
Glomerulonephritis	599.7, 580-587, 791.0	N00-N08.5, N16, N19, N26, R31, R80
Tubulo-interstitial nephritis	590.8	N11-N12, N15-N16
Arterial Hypertension	401-405	I10-I13, I15
Thrombocytopenia	287.3, 287.5	D69.3, D69.4, D69.6
Leukocytopenia	288.0, 288.5	D70.x
Serositis	420.0-9, 511.1, 8, 9	I30.0-I32., J90, J91.8, J94.8
Smoking (ever)	305.1, V15.82	F17, Z72.0, Z86.43
Venous thromboembolism (VTE)		
Hyperlipemia	272.x	E78.x
Diabetes Mellitus	250	E10-E14
Obesity	278.0, 278.1	E65.x, E66.x
Algorithm used to calculate CCI	Quan H et al , Medical Care, Vol. 43, No. 11 , 2005, pp. 1130-1139	

Suppl Table 2 Risk factors for serious infections in patients hospitalised with Sjogren's disease (SjD) and controls. Figures are Odds ratios (OR) with 95% confidence interval by multivariate logistic regression analysis.

	SjD				Controls			
	OR	95% C.I.		p value	OR	95% C.I.		p value
Sialoadenitis	9.96	3.18-	31.1	<.001	2.46	0.99-	6.09	.052
Obesity	4.49	2.55-	7.92	<.001	4.75	3.79-	5.95	<.001
Renal disease	3.44	1.76-	6.73	<.001	3.56	2.59-	4.91	<.001
VTE	2.47	1.27-	4.79	.007	1.86	1.35-	2.56	<.001
Leukocytopenia	2.26	.86-	5.93	0.09	3.37	1.65-	6.89	<.001
Anaemia	2.22	1.28-	3.86	.004	1.20	0.93-	1.56	0.15
Smoking	2.01	1.37-	2.96	<.001	1.48	1.24-	1.76	<.001
DM	1.12	0.67-	1.85	0.67	1.44	1.17-	1.78	<.001
Age	1.02	1.01-	1.03	<.001	1.03	1.02-	1.03	<.001
Hyperlipemia	0.936	0.47-	1.83	0.84	1.58	1.20-	2.06	<.001

Suppl Table 3 Patient characteristics for patients with primary Sjogren's disease (SjD) and SjD associated with Rheumatoid Arthritis or Systemic Lupus Erythematosus (SLE) at time of index admission. Figures indicate number (%) , mean ($\pm$ SD) and median (interquartile range).

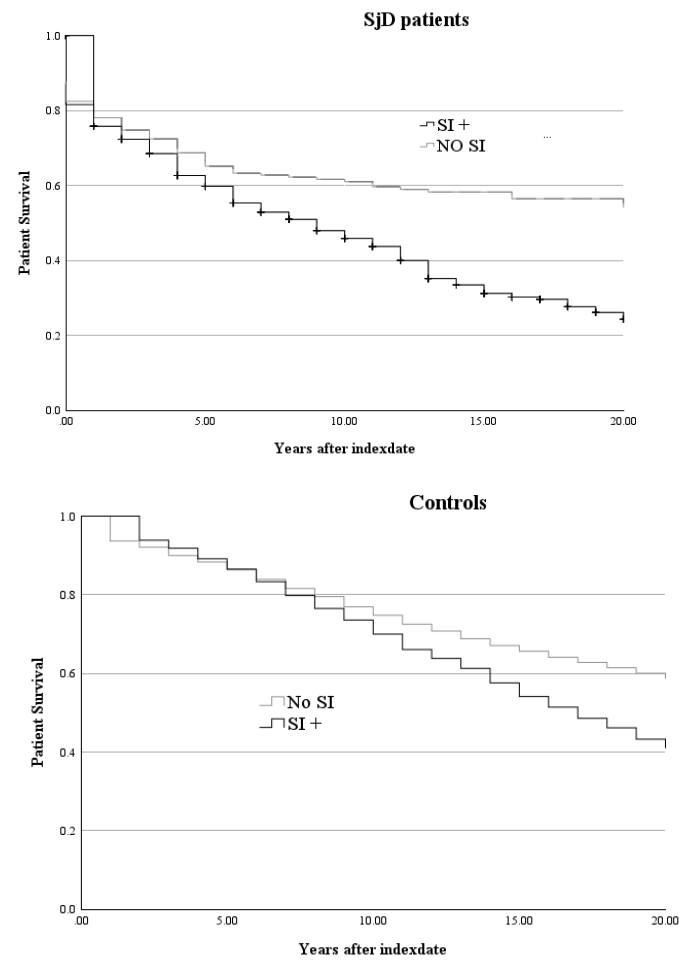
	Primary SjD (n=422)	SjD with RA (n=197)	SjD with SLE (n=73)	P value
Female	363 (86.1)	178 (90.4)	67 (91.8)	0.17
Age	67 (52-77)	68 (58-76)	55 (46-71)	0.01
Indigenous Australian	6 (1.4)	<5 (1.5)	<5 (5.5)	0.06
Smoking history	119 (28.2)	57 (28.9)	19 (26.0)	0.89
Obesity	66 (15.6)	12 (6.1)	9 (12.3)	0.04
Diabetes Mellitus	71 (16.8)	29 (14.7)	12 (16.4)	0.80
Hyperlipaemia	36 (8.5)	12 (6.1)	5 (6.8)	0.54
Hypertension	152 (36.0)	80 (40.6)	21 (28.8)	0.19
Glomerulonephritis	6 (1.4)	6 (3.0)	<5 (1.4)	0.36
Tubulo-interstitial nephritis	38 (9.0)	17 (8.6)	9 (12.3)	0.62
Thrombocytopenia	21 (5.0)	8 (4.1)	<5 (2.7)	0.66
Leukocytopenia	12 (2.8)	10 (5.1)	6 (8.2)	0.07
Anaemia	29 (6.9)	50 (25.4)	<5 (5.5)	0.001
Venous thromboembolism	33 (8.8)	19 (9.6)	7 (9.6)	0.27
Serositis	10 (2.4)	10 (5.1)	<5 (5.5)	0.14
Conjunctivitis	14 (3.3)	8 (4.1)	<5 (2.7)	0.84
Keratitis	14 (3.3)	19 (9.6)	<5 (5.5)	0.005
Caries/periodontal disease	17 (4.0)	6 (3.0)	<5 (2.7)	0.76
Sialoadenitis	22 (5.2)	8 (4.1)	<5 (4.1)	0.79
m-CCI score at index	2 (1-3)	1 (1-2)	1 (1-2)	0.02
m-CCI score ≥ 3 at index	139 (32.6)	44 (22.3)	13 (13.7)	0.02

m-CCI: modified Charlson comorbidity index (see methods)

Suppl Table 4 Mortality rates (MR), mortality rate ratios (MRR) with 95% CI and median patient survival for subcategories of patients with Sjogren's disease (SjD) by occurrence (SI+) or absence (SI-) of serious infections after index date. MR is given per 100 personyears

	Primary SjD (n=422)		SjD-RA (n=197)		SjD-SLE (n=79)	
	SI + (n=216)	SI- (n=206)	SI + (n=140)	SI-(n=57)	SI +	SI-
Person years	1521	1575	1124	498	379	222
Deaths	124	75	107	31	28	9
MR	8.15 (6.78-9.72)	4.76 (3.75-5.69)	9.52 (7.80-11.51)	6.23 (4.23-8.34)	7.39 (4.91-10.68)	4.05 (4.33-8.49)
MRR	1.71 (1.29-2.29) (p<0.01)		1.53 (1.03-2.31) (p=0.03)		1.82 (0.88-4.07) (p=0.11)	
Median survival (yrs)	11 (8.5-13.5) *	25 (12-37)	6 (4.5-7.5) *	11.0 (1.0-23.8)	9 (0.5-17. 5)	25 (10-32)
1 yr survival	76.2	79.6	75.7	78.9	74.2	80.0
5 yr survival	63.1	68.0	55.8	52.4	57.4	71.6
10 yr survival	50.4	63.4	39.1	50.2	47.4	66.8

Suppl Fig 1 Patient survival after index date for patients with Sjogrens disease (SjD) and controls by occurrence of serious infections (SI+/SI-)



Suppl Fig 2 Frequency (%) for composite (A) and specific opportunistic infections (B) in patients with primary Sjogrens's disease (SjD) and SjD associated with Rheumatoid Arthritis or Systemic Lupus Erythematosus (SLE). TBC : Tuberculosis, CMV: Cytomegaly virus. Asterix indicates $p<0.05$

